In the Claims

1. (currently amended) A method of operating a network switch which is an edge switch in an Ethernet communication network having a multiplicity of sub-nets, is arranged to receive and forward data packets which include media access control address data and network address data, and is in communication with a core router via an uplink, comprising:

performing, at the network switch, a network address look-up in respect of a data packet, which is received by the edge switch from a source local to the edge switch and on a first sub-net only if the packet has a media access control destination address of the core router;

forwarding the data packet directly towards its destination in response to the network destination address data in the data packet, without the data packet traversing the core router via the uplink, when the network destination address is a destination local to the edge switch, but on a second sub-net; and

forwarding the data packet from the edge switch to the core router via the uplink, whenever the network destination address is a destination that is not local to the edge switch;

said edge switch maintaining look-up tables of ~~media access control addresses and~~ network addresses only for local sources and destinations on both the first and second sub-nets.

2. (currently amended) A method according to claim 1 wherein the network switch forwards the data packet to the core router in response to media access control data in the data packet.

3. (original) A method according to claim 1 wherein the network switch provides a default route to the core router for network destination addresses which are not local to the network switch.

4. (currently amended) A network edge switch having ports for the reception and forwarding of Ethernet data packets which include media access control address data and network address data and organized:

(a) to perform a media access control address look-up in respect of a first data packet received by the edge switch;

(b) to bridge the data packet if a source and a destination of the data packet are on a same subnet and local to the edge switch;

(c) to perform a network destination address look-up in respect of a second data packet which is received by the edge switch from a source local to the edge switch and on a first sub-net and has a network destination address on a second sub-net, the network destination address look-up performed only if the media access control destination address of the second data packet is to a core router connected to the edge switch by an uplink;

(d) to forward said second data packet directly towards its destination in response to network address data in said second data packet when the destination thereof is a local destination; and

(e) to forward said second data packet from the edge switch by a default route, in response to media access control address data in said second data packet, if the destination thereof is not local to the edge switch, said edge switch having look-up tables of ~~media access control addresses and~~ network addresses for local sources and destinations on both the first and second sub-nets.

5. (currently amended) A combination of a core router and an edge switch, connected by an uplink, for the reception and forwarding of Ethernet data packets, wherein said edge switch is organized:

(a) to perform a media access control address look-up in respect of a first data packet received by the edge switch;

(b) to bridge said first data packet when the media access control source and a destination addresses of the data packet are for devices on a same subnet and local to the edge switch;

(c) to perform a network destination address look-up in respect of a second data packet which is received by the edge switch from a source local to the edge switch and on a first sub-net and has a destination on a second sub-net, wherein the network destination address look-up is performed only if the media access control destination address of the data packet is the core router media access control address;

(d) to forward said second data packet directly towards its destination in response to network address data in said second data packet when the destination thereof is a local destination; and

(e) to forward said second data packet to said core router, via the uplink, from the edge switch, in response to media access control address data in said second data packet, if the destination thereof is not local to the edge switch, said edge switch having look-up tables of ~~media access control addresses and~~ network addresses only for sources and destinations local to the edge switch on both the first and second sub-nets.